

Tennessee



Sciolist (SAI-uh-list) noun

- One who engages in pretentious display of superficial knowledge

Perpetual Care Trust Fund in Tennessee

For the long term monitoring of the Environmental
Management Waste Management Facility (EMWMF) in
Oak Ridge, Tennessee

EPA Institutional Control Roundtable

Dale Rector, DOE Oversight Division

April 4, 2006, Tucson AZ

Presentation Objectives

History of the Oak Ridge NPL Site

Establishment of EMWMF

Long Term Issues

Need for Long Term Funding

How the Fund was Established

How the Dollar Amount was set

Use

History of the Oak Ridge Reservation

April 4, 2006

TDEC-DOE-O

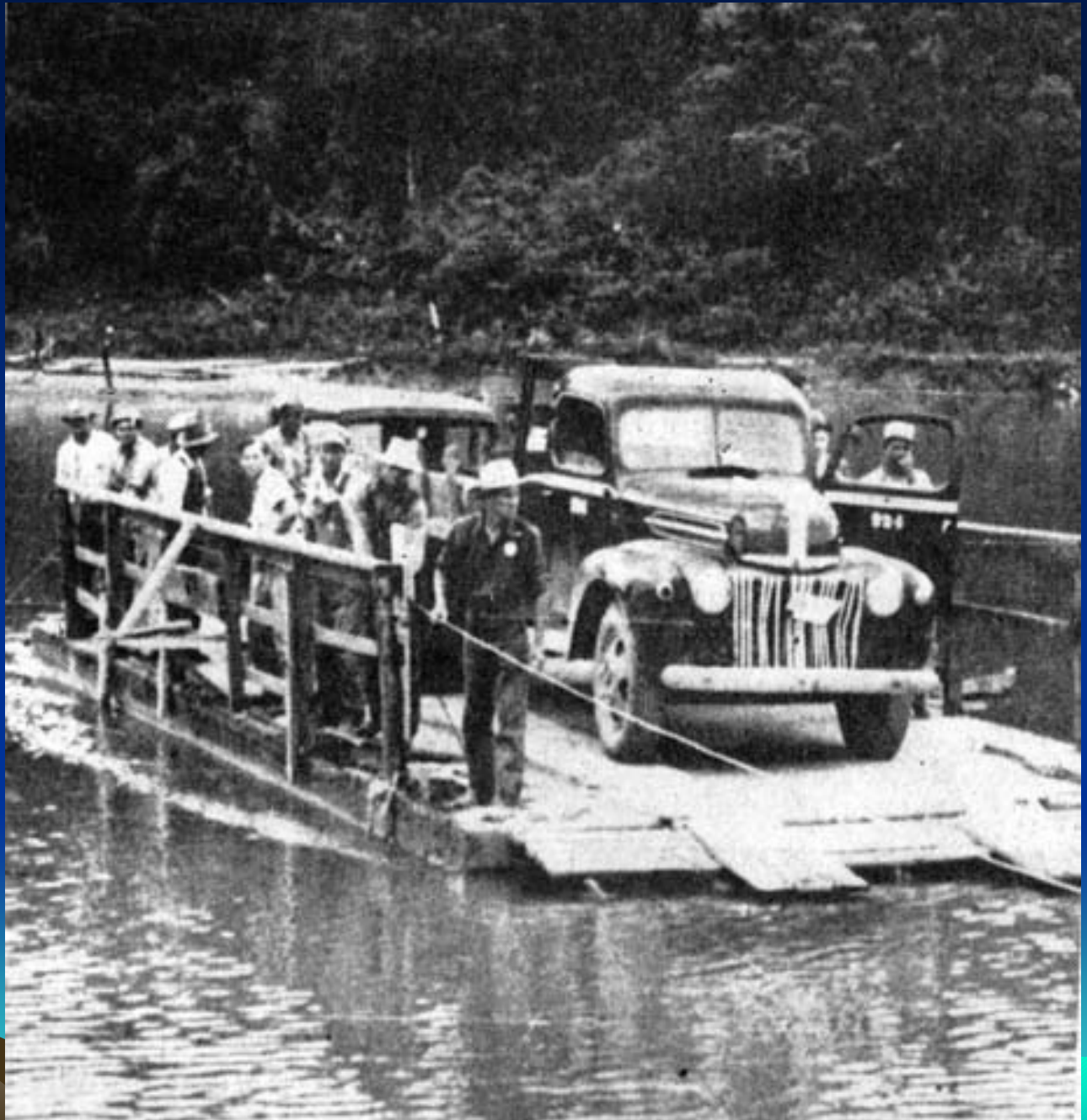
Farm Life Pre-Manhattan





Pre-Manhattan Farm, neatly constructed, three ears corn, good luck

Few bridges and
decent roads,
crossing the
Clinch River



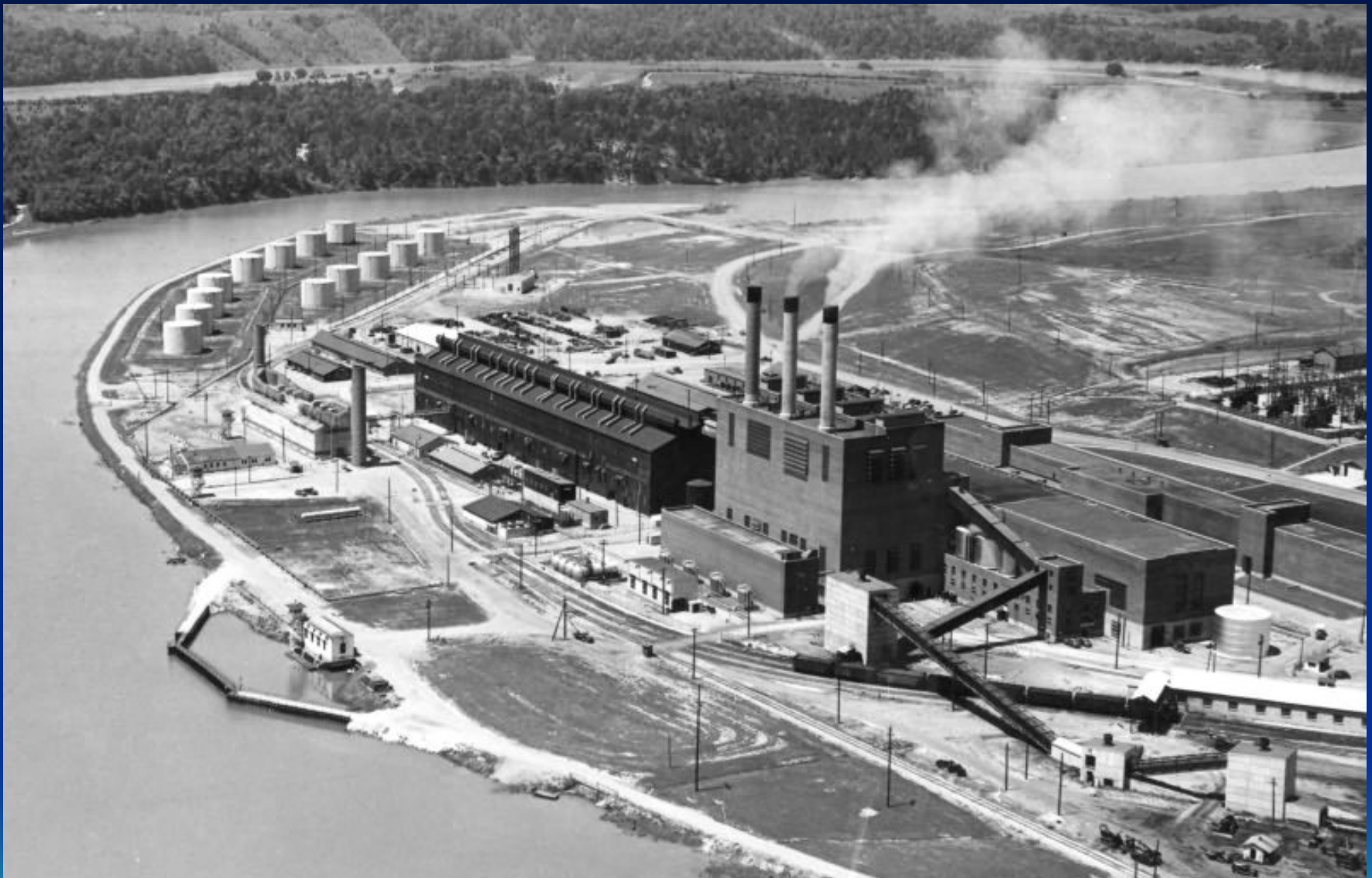
April 4, 2006

Clinton Engineering Works, Secret City



Size of Industrial Sites and Reservation

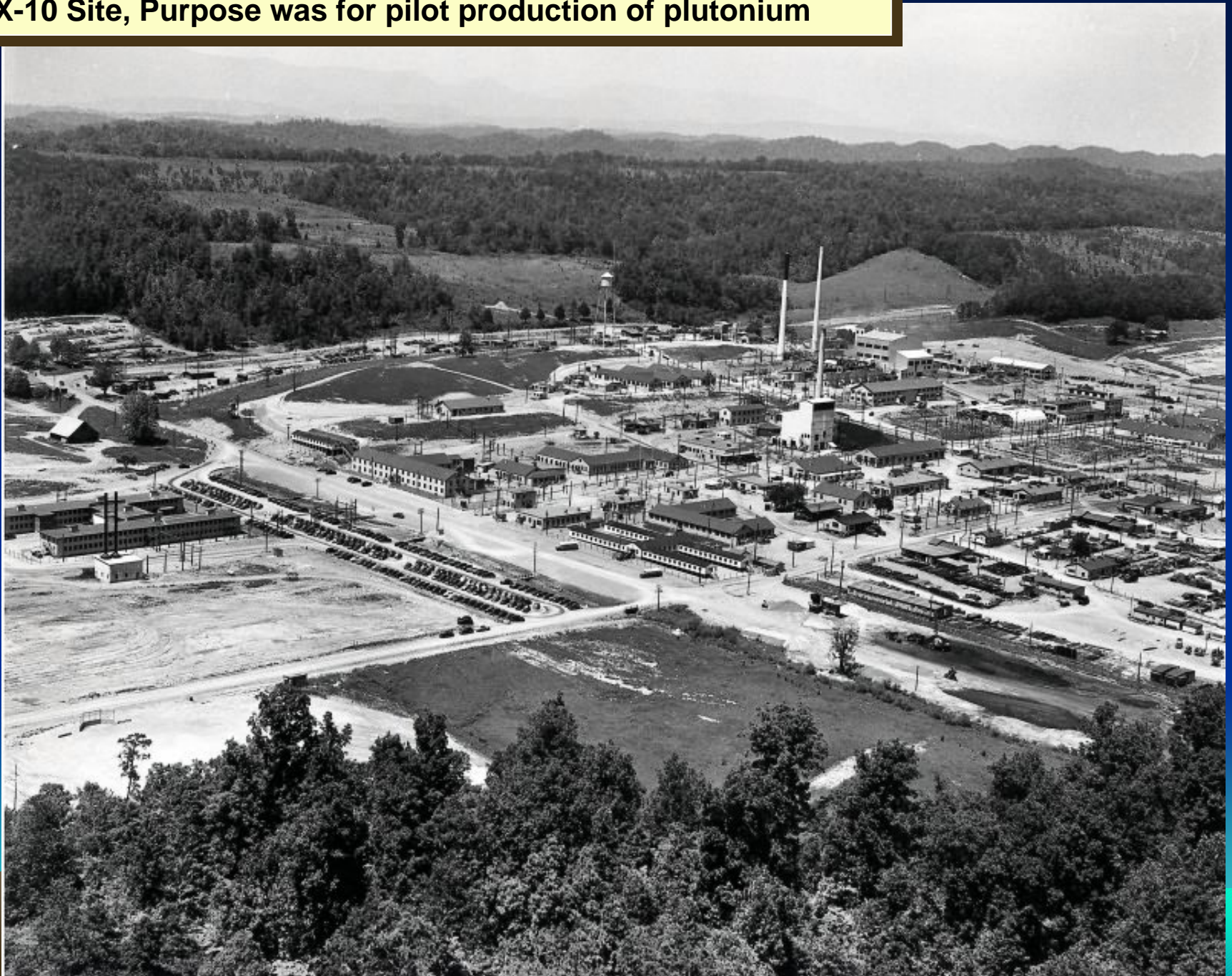
- S-50 “big” but not there anymore
- Y-12 800 acres
- K-25 1,500 acres
- X-10 2,900 acres
- Oak Ridge Reservation originally 59,000 acres, but is now 35,000 acres
- Oak Ridge City Limits still 59,000 acres



S-50 Thermal U-235

Separation Plant on the Banks of the Clinch River, Not very effective, but generated feedstock for Y-12 and K-25, 1944-45 , 13 Tanks contents “rivered” per legend

X-10 Site, Purpose was for pilot production of plutonium





Oak Ridge National Laboratory

DOE photo

K-25, Purpose, separation of U-235, Each side of "U" is one-half mile. Site is two miles across. Probably late 1943 to 1945.



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K-25 enrichment converters. Eventually there were five large enrichment buildings



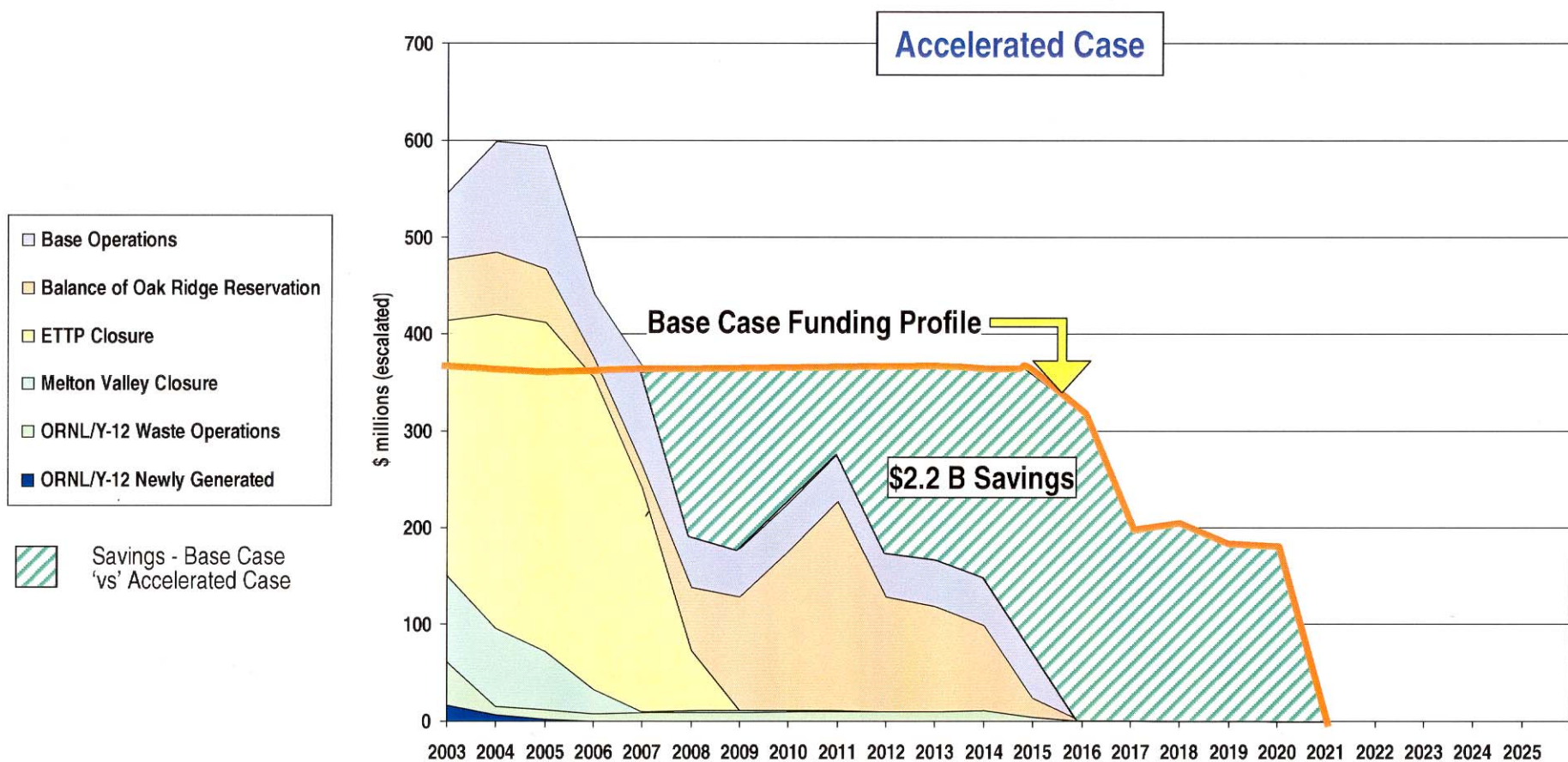
Y-12, magnetic separation plant for U235. Plant, well over two miles in length 1940s. Today's groundwater contamination reaches over four miles.

Nature and Extent of Contamination

- 100 miles of streams addressed by advisories and institutional controls
- 130 acres of buried waste (6 mil Curies)
- 40 mil pounds buried uranium
- 250,000 Curies discharged into streams
- 339,000 pounds mercury discharged into streams

Nature and Extent Continued

- Six shut down reactors
- More than 400 surplus facilities
- LLW, mixed LLW, and most of DOE RH TRU stored in Oak Ridge
- 62,000 tons of uranium hexafluoride
- Several offsite commissioners orders for scrap yard type cleanup



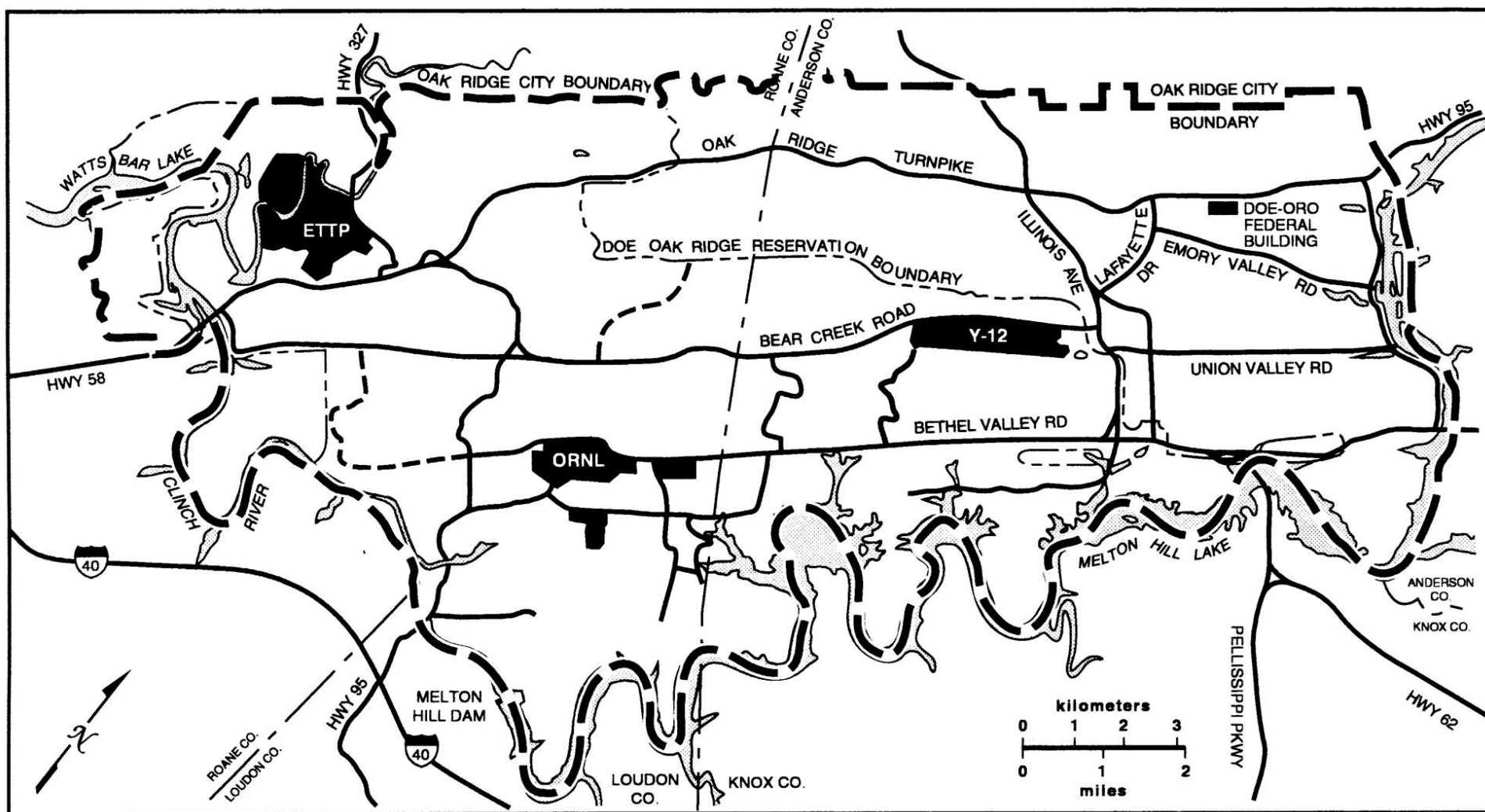
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total Base Case	386	382	384	381	382	382	383	385	384	386	389	387	382	336	208	220	193	193	61	7	2	1	0
Funding Required for Acceleration	161	252	251	141	63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Savings	0	-35	-40	-79	-78	-189	-205	-160	-108	-209	-220	-235	-302	-318	-206	-219	-193	-193	-61	-7	-2	-1	0
Net Funding Required from Expedited Cleaup Fund	161	217	211	62		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Accelerated Case	547	598	595	443	367	194	177	225	276	177	169	152	79	19	1	0	0	0	0	0	0	0	0

Figure E.5 Comprehensive Closure Plan Funding Profile

**Interim Holding Pond Area of
White Oak Creek Flood Plain
being cleaned up. June 2002.**



City limits still the same as the old “District” boundary and includes, K-25, X-10, Y-12, and the old S-50 site.





Establishment of EMWMF

April 4, 2006

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Needs

- Off site waste disposal options, WIPP, NTS, and commercial
- On site option needed for high volume “lower activity” wastes (90% of waste)
- Interstate equity better if Tennessee disposes as much waste as possible onsite
- Cost effectiveness





Y-12

EMWMF

ETTP

ORNL

Long Term Issues

- At some point, DOE will zero out the clean-up budget
- Contaminants will last to perpetuity
- Engineered structures will fail
- A monitoring and maintenance fund is needed

Need for Long Term Funding

- The DOE complex will be cleaned up
- Congress might view projects as “finished”
- Subject to annual appropriations at any rate
- Needed a trustworthy source of funding for state monitoring
- “Trust Fund” *Reliable Fund*

How the Fund was Established

- Trust Fund Provision in Tennessee Hazardous Waste Law (TCA 68-212-108)
- Resource Conservation and Recovery Act (RCRA Sec. 6001, 42 USCA sec. 6961) Reasonable Service Charge
- We Made the Trust Fund a Condition to have an On Site Disposal Facility (No Fund, no EMWMF)
- Consent Order

How the Dollar Amount Was Set

- O & M costs est. 840,000 dollars/year
- 14 million dollars needed to produce this interest annually at 6% rate of gain.
- DOE sends Tennessee a one million dollar check annually for 14 years.
- Interest compounds for 14 years with no expenditures from fund.
- Then it covers grounds maintenance and monitoring only, no repair.

Use

- Grounds Maintenance and Monitoring
- Local office still?
- Exploring automated monitoring technology
- Still need some field workers
- Mobile contaminants will leak out of cell even with no engineering failures
- These will be a ground truth of the WAC

Fund only Applies to EMWMF

- If other areas are left or created that require perpetual care,
- Reliable Funding must be established.
- Even if no RCRA driver, as with radioactive wastes without hazardous chemical ingredients

